

**WHAT IS CLAIMED IS:**

1. A film formation method comprising the steps of:  
forming a first film in a chamber by using a first gas;  
5 installing a substrate into the chamber after forming the first film; and  
forming a second film over a surface of the substrate by using the first film  
and a second gas.
2. A film formation method according to claim 1, wherein the second film  
10 is formed at a pressure of 20 Pa or less.
3. A film formation method according to claim 1, wherein the second film  
is formed over one selected from the group consisting of a glass substrate, a plastic  
substrate, and an organic resin film.  
15
4. A film formation method according to claim 1, wherein the first film is  
formed by plasma CVD, and the second film is precipitated by sputtering.
5. A film formation method according to claim 1, wherein a  
20 semiconductor device is manufactured by using the second film as a protective  
film of a semiconductor element.
6. A film formation method according to claim 1, wherein the  
semiconductor element comprises at least one selected from the group consisting  
25 of a thin film transistor, an organic thin film transistor, a thin film diode, a  
photoelectric conversion element, and a resistor.
7. A film formation method comprising the steps of:

forming a first film in a chamber by using a first gas;  
installing a substrate into the chamber after forming the first film; and  
forming a silicon nitride film over a surface of the substrate by using the  
first film and a second gas.

5

8. A film formation method according to claim 7, wherein the first gas  
comprises a silicide gas and nitrogen.

9. A film formation method according to claim 7, wherein the second gas  
10 comprises at least one selected from the group consisting of helium (He), neon  
(Ne), argon (Ar), krypton (Kr), and xenon (Xe).

10. A film formation method according to claim 7, wherein the second  
film is formed at a pressure of 20 Pa or less.

15

11. A film formation method according to claim 7, wherein the second  
film is formed over one selected from the group consisting of a glass substrate, a  
plastic substrate, and an organic resin film.

20 12. A film formation method according to claim 7, wherein the first film is  
formed by plasma CVD, and the second film is precipitated by sputtering.

13. A film formation method according to claim 8, wherein the silicide gas  
comprises at least one selected from the group consisting of monosilane, disilane,  
25 and trisilane.

14. A film formation method according to claim 7, wherein a  
semiconductor device is manufactured by using the second film as a protective

film of a semiconductor element.

15. A film formation method according to claim 7, wherein the semiconductor element comprises at least one selected from the group consisting  
5 of a thin film transistor, an organic thin film transistor, a thin film diode, a photoelectric conversion element, and a resistor.

16. A film formation method comprising the steps of:  
forming a first film in a chamber by using a first gas;  
10 installing a substrate into the chamber after forming the first film; and  
forming a silicon oxide film over a surface of the substrate by using the first film and a second gas.

17. A film formation method according to claim 16, wherein the first gas  
15 comprises a silicide gas and oxygen.

18. A film formation method according to claim 16, wherein the second gas comprises at least one selected from the group consisting of helium (He), neon (Ne), argon (Ar), krypton (Kr), and xenon (Xe).  
20

19. A film formation method according to claim 16, wherein the second film is formed at a pressure of 20 Pa or less.

20. A film formation method according to claim 16, wherein the second  
25 film is formed over one selected from the group consisting of a glass substrate, a plastic substrate, and an organic resin film.

21. A film formation method according to claim 16, wherein the first film

is formed by plasma CVD, and the second film is precipitated by sputtering.

22. A film formation method according to claim 17, wherein the silicide gas comprises at least one selected from the group consisting of monosilane,  
5 disilane, and trisilane.

23. A film formation method according to claim 16, wherein a semiconductor device is manufactured by using the second film as a protective film of a semiconductor element.

10

24. A film formation method according to claim 16, wherein the semiconductor element comprises at least one selected from the group consisting of a thin film transistor, an organic thin film transistor, a thin film diode, a photoelectric conversion element, and a resistor.

15

25. A film formation method comprising the steps of:  
forming a first film in a chamber by using a first gas;  
installing a substrate into the chamber after forming the first film; and  
forming a silicon oxynitride film over a surface of the substrate by using  
20 the first film and a second gas.

26. A film formation method according to claim 25, wherein the first gas comprises a silicide gas, oxygen, and nitrogen.

25 27. A film formation method according to claim 25, wherein the second gas comprises at least one selected from the group consisting of helium (He), neon (Ne), argon (Ar), krypton (Kr), and xenon (Xe).

28. A film formation method according to claim 25, wherein the second film is formed at a pressure of 20 Pa or less.

29. A film formation method according to claim 25, wherein the second  
5 film is formed over one selected from the group consisting of a glass substrate, a plastic substrate, and an organic resin film.

30. A film formation method according to claim 25, wherein the first film is formed by plasma CVD, and the second film is precipitated by sputtering.

10

31. A film formation method according to claim 26, wherein the silicide gas comprises at least one selected from the group consisting of monosilane, disilane, and trisilane.

15 32. A film formation method according to claim 25, wherein a semiconductor device is manufactured by using the second film as a protective film of a semiconductor element.

20 33. A film formation method according to claim 25, wherein the semiconductor element comprises at least one selected from the group consisting of a thin film transistor, an organic thin film transistor, a thin film diode, a photoelectric conversion element, and a resistor.